HP 3000 Computer Systems

SERIES 44/48
INSTALLATION MANUAL

(Including Upgrade Products)

FEDERAL COMMUNICATION COMMISSION RADIO
FREQUENCY INTERFERENCE STATEMENT

The United States Federal Communications Commission (in Subpart J, of Part 15, Docket 20780) has specified that the following notice be brought to the attention of the users of this product:

"Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested for compliance with the limits for Class A computing devices pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference."

"This product has been tested and licensed by the Fernmeldetechnisches Zentralamt (FTZ) for use in West Germany. Included with the system is a registration postcard to be completed and mailed for all German installations."

LIST OF EFFECTIVE PAGES

The List of Effective Pages gives the date of the current edition, and lists the dates of all changed pages. Unchanged pages are listed as "ORIGINAL". Within the manual, any page changed since the last edition is indicated by printing the date the changes were made on the bottom of the page. Changes are marked with a vertical bar in the margin. If an update is incorporated when an edition is reprinted, these bars and dates remain. No information is incorporated into a reprinting unless it appears as a prior update.

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First Edition . . . . . . . . . . . . . . . . . . . JAN 1981
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CHNL 11/12	CHNL 12/13	CHNL 11/12
DEV RANGE	DEV RANGE 0	DEV RANGE
	7	

TYPE INP	TYPE INP	TYPE INP
SLOT	SLOT	SLOT
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DEV RANGE	DEV RANGE	DEV RANGE

TYPE ADCC (MAIN)	TYPE —	TYPE ADCC (EXT)
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TYPE ADCC (MAIN)	TYPE —	TYPE ADCC (EXT)
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DEV RANGE 0	DEV RANGE —	DEV RANGE 4
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DEV RANGE 0	DEV RANGE —	DEV RANGE 4
3	—	7

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DEV RANGE 0	DEV RANGE —	DEV RANGE 4
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TYPE ADCC (MAIN)	TYPE —	TYPE ADCC (EXT)
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DEV RANGE	DEV RANGE —	DEV RANGE 4
3	—	7

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Figure 2-6. Side Junction Panel Identification Chart

TYPE CMP/ADCC	TYPE —	TYPE ADCC (EXT)	TYPE ADCC (MAIN)	TYPE —	TYPE ADCC (EXT)	TYPE INP	TYPE INP	TYPE INP	TYPE GIC	TYPE GIC	TYPE GIC
SLOT 14	SLOT —	SLOT 15	SLOT	SLOT	SLOT	SLOT	SLOT	SLOT	SLOT	SLOT	SLOT 16
CHNL 1	CHNL —	CHNL 1	CHNL 7	CHNL —	CHNL 7	CHNL 12	CHNL 12	CHNL 12	CHNL 9	CHNL 10	CHNL 11
DEV RANGE 0	DEV RANGE —	DEV RANGE 4	DEV RANGE 0	DEV RANGE —	DEV RANGE 4	DEV RANGE	DEV RANGE	DEV RANGE	DEV RANGE 0	DEV RANGE 0	DEV RANGE 0
3	—	7	3	—	7				7	7	7

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Figure 2-7. Rear Junction Panel Identification Chart

ELECTRICAL DESCRIPTION

The processor unit is available for either 50 Hz or 60 Hz operation. The difference in hardware is the power control module (PCM), one type for each frequency. Both PCM units contain four AC receptacles (CEE-22 for 50 Hz; 5-15R for 60 Hz), two of which are controlled by separate switches on the PCM panel. Two receptacles are used for the system console and disc. The remaining outlets may be used by HP 3000 Series 44 peripheral devices or CE test equipment, providing that they do not exceed receptacle amperage ratings. Each 60 Hz duplex receptacle will supply up to 10 amperes. A total of eight amperes can be supplied from the four 50 Hz receptacles. All processor units can operate at any 200, 210, 220, 230, or 240 (+4%/-10%) VAC inputs.

The 60 Hertz Installations

The processor is shipped with a pre-connected, single-phase power cord and plug. The built-in single-phase isolation transformer is designed to operate within the power line specifications described in the Site Planning and Preparation Guide. The transformer has voltage strapping options on its primary input transformer windings which have been preset at the factory for 208 VAC operation.

If 208 VAC is not available at the site and an alternate voltage has been installed, the transformer must be strapped to accomodate this voltage. (Refer to Appendix B for the strapping procedure.) The power cord and plug supplied with the processor is suitable for most specified 60 HZ installations. The plug will fit the NEMA Type 6-30R receptacle, as specified in the Site Planning and Preparation Guide. If a locking type NEMA plug (L6-30P) is required for a particular computer site, the following procedure must be used. The L6-30P locking plug is available thru all Hubbell Electric suppliers.

NOTE

Hewlett-Packard will support the installation of the locking type NEMA plug (L6-30P) on Series 44/48 Computers with the following restrictions: (1.) Installation of the plug must be performed according to the "L6-30P Installation Procedure" listed below. (2.) Installation must be performed by a qualified electrician or by a Hewlett-Packard Customer Engineer for an additional charge.

The L6-30P plug is installed as follows (See Figure 2-8.).

1. Turn all CPU circuit breakers off.

2. Remove existing plug (use heavy duty wire cutters).

3. Slide new plug cover onto power cord.

4. Strip exterior cord jacket back 1 1/2 inches, exposing three insulated AC power wires.

5. Strip insulation on all three wires back 1/2 inch.

6. Plug terminals are labeled X, Y, and G. Connect green wire to terminal G, black wire to terminal X, and white wire to terminal Y.

7. Slide plug cover over exposed connector terminals and fasten securely. Ensure that cable strain relief is fastened firmly.

8. Check power receptacle with a voltmeter for proper voltage before inserting plug.
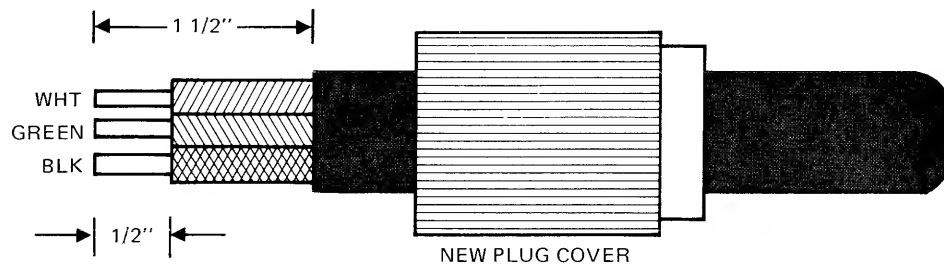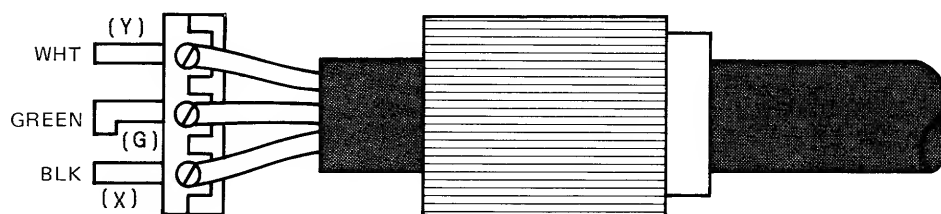
Figure 2-8. L6-30P Plug Installation

The 50 Hertz Installations

The 50 Hz processors are similar to the 60 Hz units except that a power cord and plug are not included. The appropriate hard line or cord connection must be supplied by the customer. A detailed illustration of connecting a power line to the processor PCM is shown in Figure 2-9. The Customer Engineer is responsible only for inspecting the installation of the power line before power is applied to the system. Figure 2-10 shows the electrical connections.
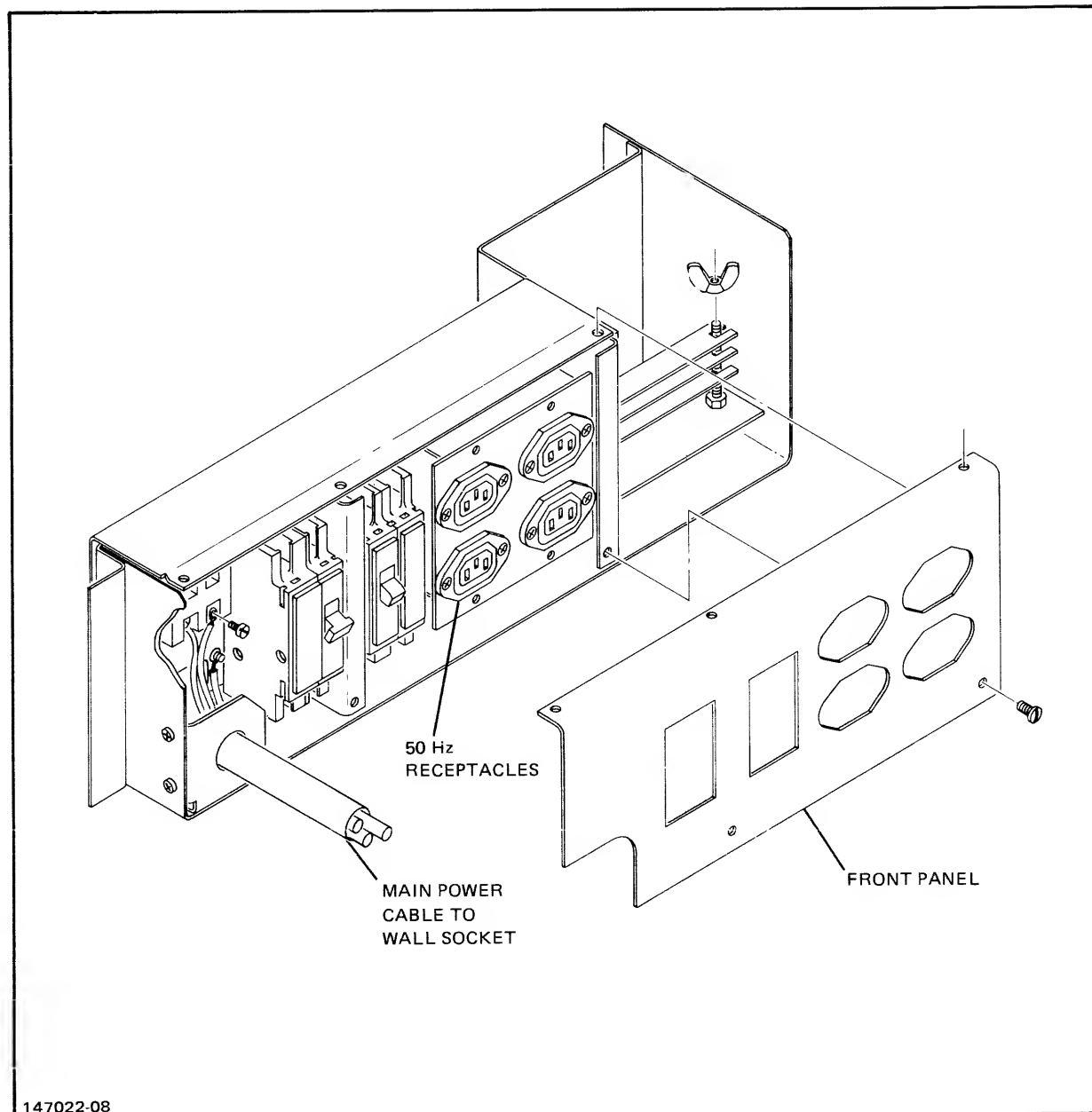
Figure 2-9. Power Line Connection (50 Hz)

WARNING

When the cover plate is removed, hazardous voltages
are present unless the breaker at the branch circuit is
set to **OFF**.

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SEE DETAIL A

DETAIL A

L1   L2

GR.

NOTE:
FLEXIBLE POWER CORDS CANNOT BE USED
IN INSTALLATIONS WITHIN THE UNITED
STATES OR CANADA.

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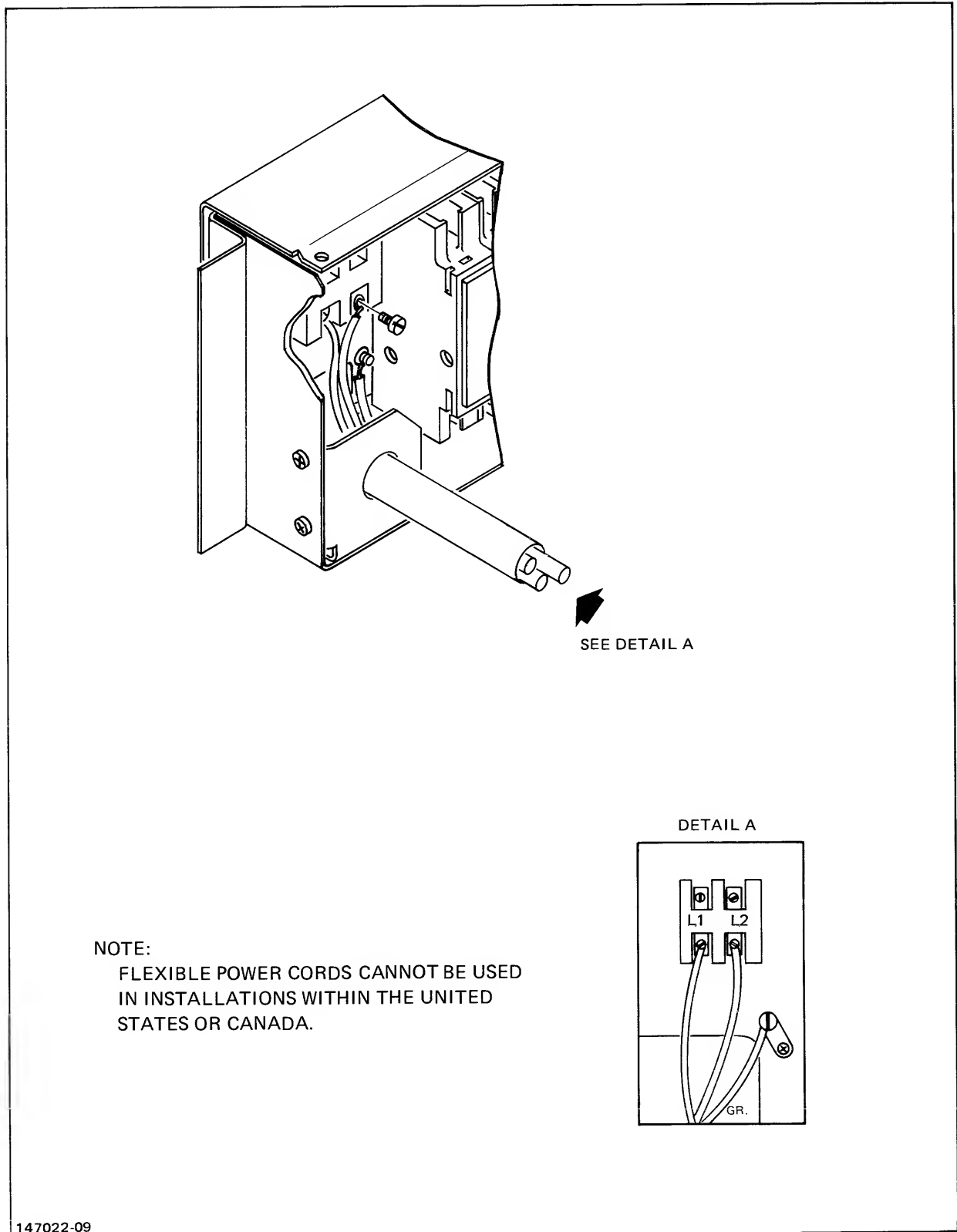
Figure 2-10. PCM Terminal Block Connections

System installation consists of integration of the processor, the peripheral devices, and the system operating software. The peripheral devices interface with the processor through the Terminal and I/O Panels. Technical descriptions on the I/O system and other related hardware are available in the Reference/Training Manual. Topics covered in this section are listed below:

o Installing the Processor.

o Installing the System Console.

o Installing Disc Drives.

o Installing the Magnetic Tape Drives.

o Installing Printers.

o Installing Card Readers.

The HP 3000 Series 44 Computer System consists of a processor unit and associated peripheral devices. Supported peripherals which are part of the system are listed in Table 3-1. Supported RS-232-C devices interface to the system through Asynchronous Data Communication Channels (ADCC) and all other devices connect through General I/O Channels (GIC).

In general, installation of a peripheral device consists of connecting either an HP-IB or RS-232-C interface cable and an AC power cord. If questions arise or problems occur with any device, refer to the appropriate service manual. Unpack and move each device into place, then install according to the procedures given in this section. After installation, identify the device on receptacle tags on the junction panels.

WARNING

Hazardous voltages are present inside the processor and peripheral cabinets when AC power is applied. Therefore, do not connect the processor or any peripheral to a source of AC power until all units are installed in place and interconnections have been completed.

Table 3-1. HP 3000/40 Peripheral Devices

DEVICE	MODEL	CHANNEL TYPE
Terminals	HP 264x series	ADCC
	HP 262x series	ADCC
	HP 2382	ADCC
Factory Collection Terminals	HP 307x series	ADCC
Printing Terminals	HP 263x series	ADCC
	HP 2601A	ADCC
Line Printers	HP 2563A/65A/66	GIC
	HP 2608A/S	GIC
	HP 2611A	GIC
	HP 2617A opt 344	GIC
	HP 2619A opt 344	GIC
	HP 2631B opt 331	ADCC
Page Printer	HP 2680A opt 344	GIC
	HP 2687A	ADCC or ATP
	HP 2688A*	GIC
Mag Tape (master)	HP 7970E opt 426	GIC
Mag Tape (slave)	HP 7970E opt 421	N/A
Mag Tape	HP 7971	GIC
Mag Tape	HP 7974A/78A	GIC
Mag Tape (master)	HP 7976A opt 516	GIC
Disc Drives	HP 7906M	GIC
	HP 7906S	N/A
	HP 7920M	GIC
	HP 7920S	N/A
	HP 7925M	GIC
	HP 7925S	N/A
	HP 7911P	GIC
	HP 7912P	GIC
	HP 7914P	GIC
	HP 7933H	GIC
Flexible Disc	HP 9895A	GIC

*Low speed device if connected via HP-IB Extender 37203A opt. 10.

INSTALLING THE PROCESSOR

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The following procedures should be started only after Sections I and II have been completed. Procedures in this section should be followed in the sequence in which they are presented.

The processor is installed as described in the following steps (see Figures 2-1, 2-2, and 2-3):

1. Ensure that the unit is positioned in an area which allows for complete cabinet door access and AC power receptacle access.

2. Secure and level the unit by adjusting the rubber feet near the casters.

3. Ensure that the PROCESSOR, MAIN POWER, and OUTLET POWER switches are in the OFF position.

4. Preset the following system control panel switches as shown:

Thumbwheel	Channel Number	Device Number
LOAD (from mag. tape)	9	1
START (sys. disc)	11	0
DUMP	11	0

INSTALLING THE SYSTEM CONSOLE

The standard system console is the HP 2621A, although any of the Hewlett-Packard terminals or printing terminals can be used as the system console. The following procedure is given for the standard system console, and also applies to the other terminals:

1. Place the terminal to be used as the system console on the processor table top.

2. Ensure that the terminal ON/OFF switch is in the OFF position.

3. Connect the AC power cord from the console to a processor power control module (PCM) AC receptacle.

4. Connect the console keyboard cable hood connector to the printed circuit card edge connector that has been notched to match the cable connector.

5. Connect the console data cable to the port marked CONSOLE on the rear junction panel.

(1) CONSOLE POWER CABLE

(2) U.S. MODEM CABLE

(3) KEYBOARD CABLE
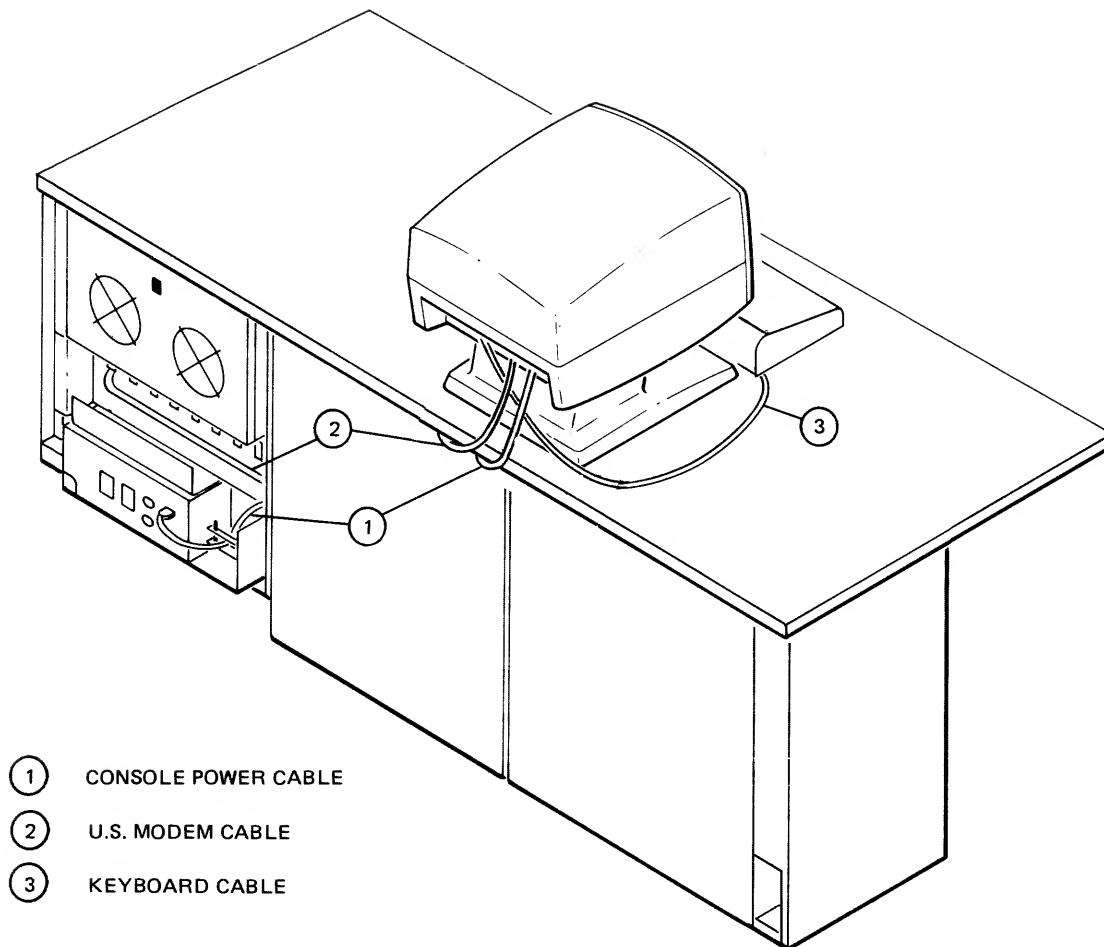
Figure 3-1. Panel-to-Console Cable Routing and Connection View

INSTALLING DISC DRIVES

The HP 7906B, 7911P, 7912P, 7920, 7925 and 7933H Disc Drives can be configured as masters on the HP 3000 Series 44 Computer. The HP 7906, 7920, and 7925 Disc Drives can also be configured as slaves. The following paragraphs describe the general installation of these disc drives. More detailed instructions are in the installation manuals shipped with the individual units.

Position the system disc drive on the one side of the processor cabinet allowing for the full opening of any access doors. The system disc drive cabinet contains the HP 13037B disc controller (identified with an "M" designator in the cabinet serial tag). Next, position slave disc(s) near the master disc unit.

3-4

7920M, 7925M, OR 7906M DISC DRIVE CABINET

FRONT

- 13037B DISC CONTROLLER
- DETAIL OF THIS BOARD SHOWN BELOW
- 12745-60001 (SLOT 1)
- DEV. CONTROLLER (SLOT 3)
- ECC (SLOT 4)
- MICRO PROC. (SLOT 5)
- 13013-60002
- 12745-60002
- 13037-60021
- 12745-60003

THUMBWHEEL SWITCH S1

ISS TLK

SEL LTN PPR

THUMBWHEEL SWITCH S2

LED ASSY CR 2

12745A DISC HPIB CONTROLLER BOARD

CONTROL/ INDICATOR	FUNCTION
SWITCH S1	Selects CPU number (0 - 7). Number is detected by controller during its polling operation. In a multi-CPU system, no two CPU's can have the same number.
SWITCH S2	Selects HP-IB address (0 - 7).
LED ASSY CR2	Indicates operational state of adapter kit PCA. LED's are coded as follows:
	SEL — SELECT. When LED is lit, it indicates that controller is operating on adapter kit PCA. When controller is idle. LED will be dimly lit.
	ISS — IDENTIFY STANDBY STATE.
	LTN — LISTEN. When LED is lit, it indicates that adapter kit PCA is in Listen mode.
	TLK — TALK. When LED is lit, it indicates that adapter kit PCA is in Talk mode.
	PPR — PARALLEL POLL RESPONSE. When LED is lit, it indicates that adapter kit PCA is ready to respond to a Parallel Poll from the controller of the HP-IB as soon as it is given.

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Figure 3-3. System Disc HP-IB Device Select Switch

Installing the HP 9895A Flexible Disc Drive

The flexible disc drive may be installed in the system and used for user backup. The following procedure applies to single or multiple flexible disc installation.

1. Connect HP-IB I/O cable from flexible disc drive to junction panel 13 as shown in Section II.

2. Ensure that AC POWER switch on flexible disc drive is set to OFF.

3. On flexible disc controller, set device address number to first available device address.

4. Connect flexible disc drive power cord to a dedicated power source with an isolated ground.

5. If an HP 9895 is sharing a GIC with other Devices, it should remain powered on at all times otherwise HP-IB cable length must be limited to meet specifications without its active load.

INSTALLING PRINTERS

Installing the HP 2563A/65A/66A Line Printer

The following steps apply to the installation of single or multiple HP 2563A/65A/66A printers. Refer to detailed instructions in the accompanying documentation (HP 2563A Service Manual P/N 02563-90904 or HP 2565A/66A Service Manual P/N 02566-90904).

1. Ensure that main POWER switch on back of computer is set to OFF.

2. Verify that source voltage matches requirements of printer. (See Printer Power Label.)

3. Connect interface cable from computer system to interface connector on back of printer.

4. Connect AC power cord to AC power input jack on back of printer and plug other end into AC outlet.

5. Set POWER switch located on back of printer to ON.

6. Load ribbon and paper as described in ribbon and paper loading portions of Operator's Manual.

7. If you have an HP-IB interface, select HP-IB address as described in HP-IB Address Section of the Operator's Manual. If you have an interface other than HP-IB, configure your interface as described in the interface manual supplied with your printer.

8. With printer off-line, press TEST key on Operator Control Panel. Then press ENTER key. A self-test printout will be printed. Compare results with self-test printout in back of Operator's Manual. Remember that self-test printout varies depending on which character set options are installed. Printer is ready for operation if no error numbers flash on self-test display and characters on self-test printout are clear and well formed.

Installing the HP 2608A/S Line Printer

The following steps apply to installation of single or multiple HP 2608A/S printers. If necessary, refer to the HP 2608A/S Service manual (P/N 02608-90904 for the A or P/N 02608-90909 for the S) or Technical Reference Manual (P/N 02608-90903 for the A or P/N 02608-90910 for the S) for more detailed instructions.

1.   Ensure that main POWER switch on back of printer is set to OFF.

2.   Verify that source voltage matches requirements of printer. (See HP 2608A/S Power Label.)

3.   Configure line printer to respond to a parallel poll by removing WT5 to WT6 jumper on HP-IB PCA (P/N 02608-60026).

4.   Connect power cable to printer and to power source.

5.   Configure printer's correct HP-IB device address. Five rocker switches at rear of printer, next to HP-IB cable connector, select HP-IB device address. Switch logic is defined in octal as follows: ON = Logic 1
        LSB = Switch 1
        MSB = Switch 5

6.   Fasten HP-IB cable(s) to HP-IB connector at rear of printer(s).

7.   Daisy chain HP-IB cable from printer no. 2 to HP-IB connector on printer no. 1, fastening the two HP-IB connectors together.

The HP 2631B Line Printers

The following applies to the installation of single or multiple HP 2631B printers:

1.   Follow steps outlined for terminals except observe the following difference concerning the HP-IB Device Address switches. Seven mini rocker switches at the rear of the printer (next to the HP-IB cable connector) select the HP-IB Device Address, Service Request (SRQ), and Listen Always (LA) modes. The logic of the switches is defined in octal as follows:

      ON = Logic 1
      LSB = Switch 5
      MSB = Switch 1
      Listen Always = Switch 6
      Service Request = Switch 7

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│      NOTE       │
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        Always set switch 6 (LA) and switch 7 (SRQ) to the OFF position when this printer is used on the HP 3000 Series 44 System..

Installing the HP 2680A/2687A/2688A Page Printer

To install the HP 2680A/2687A/2688A page printer, refer to detailed instructions provided in the accompanying documentation.

For the HP 2680A refer to the HP 2680A Service Manual, P/N 02682-90904.

For the HP 2687A refer to the HP 2683A Print Engine Service Manual (P/N 02683-90904) and the HP 26087 Serial Controller Service Manual (P/N 26087-90904).

For the HP 2688A refer to the HP 2683 Print Engine Service Manual (P/N 02683-90904) and the HP 26088 DCS Controller Service Manual (P/N 26088-90904).

WARNING

The HP 2680A/2687A/2688A page printer contains a laser. The safety precautions in the documentation shipped with it must be obeyed. Only trained personnel should install and service the 2680A printer.

Installing the HP 2617A/2619A Line Printers

The following steps apply to the installation of one or more HP 2617 or HP 2619 units. (See Figure 3-4.)

1. Ensure that processor main POWER breaker is set to OFF.

2. Remove card cage panels from rear of I/O bay.

3. Install HP-IB translator PCA(s) in assigned slot(s). (Refer to Appendix A for slot assignments.)

4. Open access door leading to side junction panel.

5. Remove four screws that secure assigned blank panel. Install interconnecting cable with connector and bracket back in place.

6. Connect ribbon cable assembly to J3 edge connector on translator PCA and to J3 edge connector on assigned GIC PCA.

7. Attach free end of interconnecting cable assembly with hood connector J2 on the HP-IB translator PCA.

8. On translator PCA, set HP-IB address switch to device address number.

9. Connect interconnecting cable assembly to mating connector on receptacle bracket and printer.

10. Replace rear I/O bay panels.

11. Ensure that printer POWER switch is set to OFF.

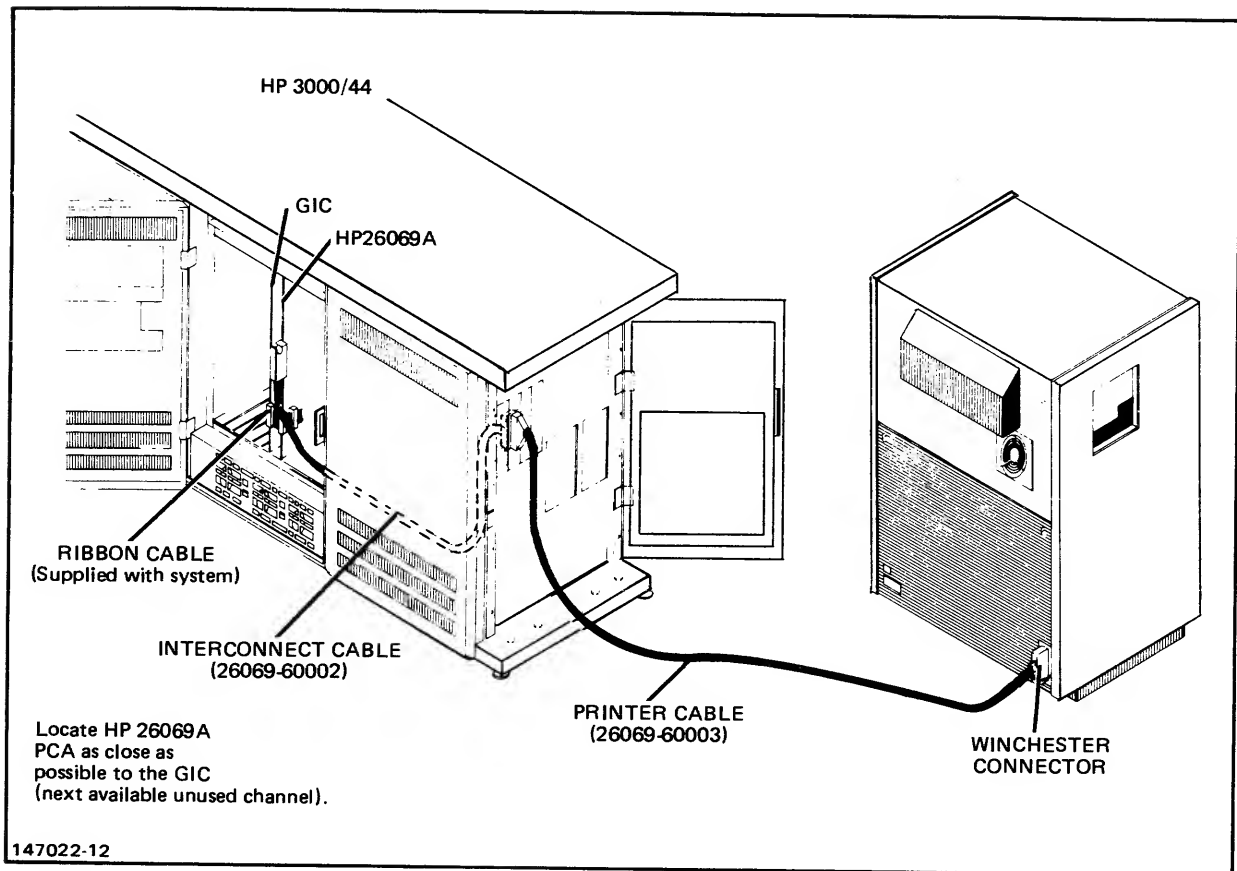12. Connect printer AC power cord to a dedicated power receptacle.

Figure 3-4. HP 2617A/2619A Line Printer

INSTALLING MAGNETIC TAPE DRIVES

Detailed instructions are provided, as follows, for the Magnetic Tape Drives.

HP 7970E Option 426 Magnetic Tape (Master)

Use the following steps for the HP 7970E Option 426 installation:

1. Ensure that the magnetic tape drive POWER switch, located on behind the front door, is set to OFF.

2. Ensure that the source voltage matches the requirements of the magnetic tape drive. (See the HP 7970E Power Label.)

3. Connect the power cord from the magnetic tape drive to a dedicated power receptacle with an isolated ground.

4. Configure the magnetic tape drive HP-IB device address switch, located as illustrated in Figure 3-5, to the address specified in Appendix C.

5. Connect the HP-IB device I/O cable to the magnetic tape drive HP-IB connectors.

6. Route the free end of the HP-IB device I/O cable to the assigned connector on one of the junction panels. (Refer to Appendix C for the proper connector location.)

The HP 7970E Option 425 Magnetic Tape Drive (Slave)

The following steps apply for the installation of the HP 7970E Option 425 Magnetic Tape Drive:

1. Ensure that the magnetic tape drive POWER switch, located behind the front door of the unit, is set to OFF.

2. Ensure that the source voltage matches the requirements of the magnetic tape drive. (See the HP 7970E Power Label.)

3. Connect the power cord from the magnetic tape drive to a dedicated power receptacle with an isolated ground.

4. Follow cabling instructions as described in the HP 7970E Magnetic Tape Drive Service Manual (P/N 07970-90919).

Installing the HP 7974A/78A Magnetic Tape Drive

Install the tape drive as follows:

1. Ensure that POWER switch is set to OFF.

2. Ensure that source voltage matches requirements of the Magnetic Tape Drive.

3.   Connect one end of HP-IB device I/O cable to Magnetic Tape Drive and other end to assigned GIC PCA.

4.   Connect power cord from Magnetic Tape Drive to a dedicated power source.

5.   Ensure that HP IB address is set correctly. Refer to procedure for setting HP IB address in tape drive manual shipped with drive.

## The HP 7976A Magnetic Tape Drive (Master Only)

The following steps apply for installing the HP 7976A Magnetic Tape Drive:

1.   Ensure that the POWER switch is set to OFF.

2.   Ensure that the source voltage matches requirements of the magnetic tape drive. (See the HP 7976A Power Label.)

3.   Connect HP-IB device I/O cable to the magnetic tape drive from the assigned GIC.

4.   Configure the power cord from the magnetic tape drive to the dedicated power receptacle with isolated ground.

5.   Refer to the HP 7976A Magnetic Tape Drive Subsystem Installation Manual (P/N 07976-90902), for operating and test information.

INSTALLING TERMINALS AND PRINTING TERMINALS

The terminals include all 264x series and 262x series. The printing terminals include the HP 2635A and HP 2601A.

1.   Ensure that the terminal main power switch is set to OFF.

2.   Ensure that the power source voltage matches the terminal requirements. (See the power label).

3.   Connect the power cord from the terminal to a dedicated power receptacle with an isolated ground.

4.   Connect the keyboard and RS-232 compatible cables to the connectors which match the cable connectors on the terminal.

5.   Route the free end of the RS-232 cable from the terminal to the installed connector on either junction panel, according to channel and device assignments given in Appendix C.
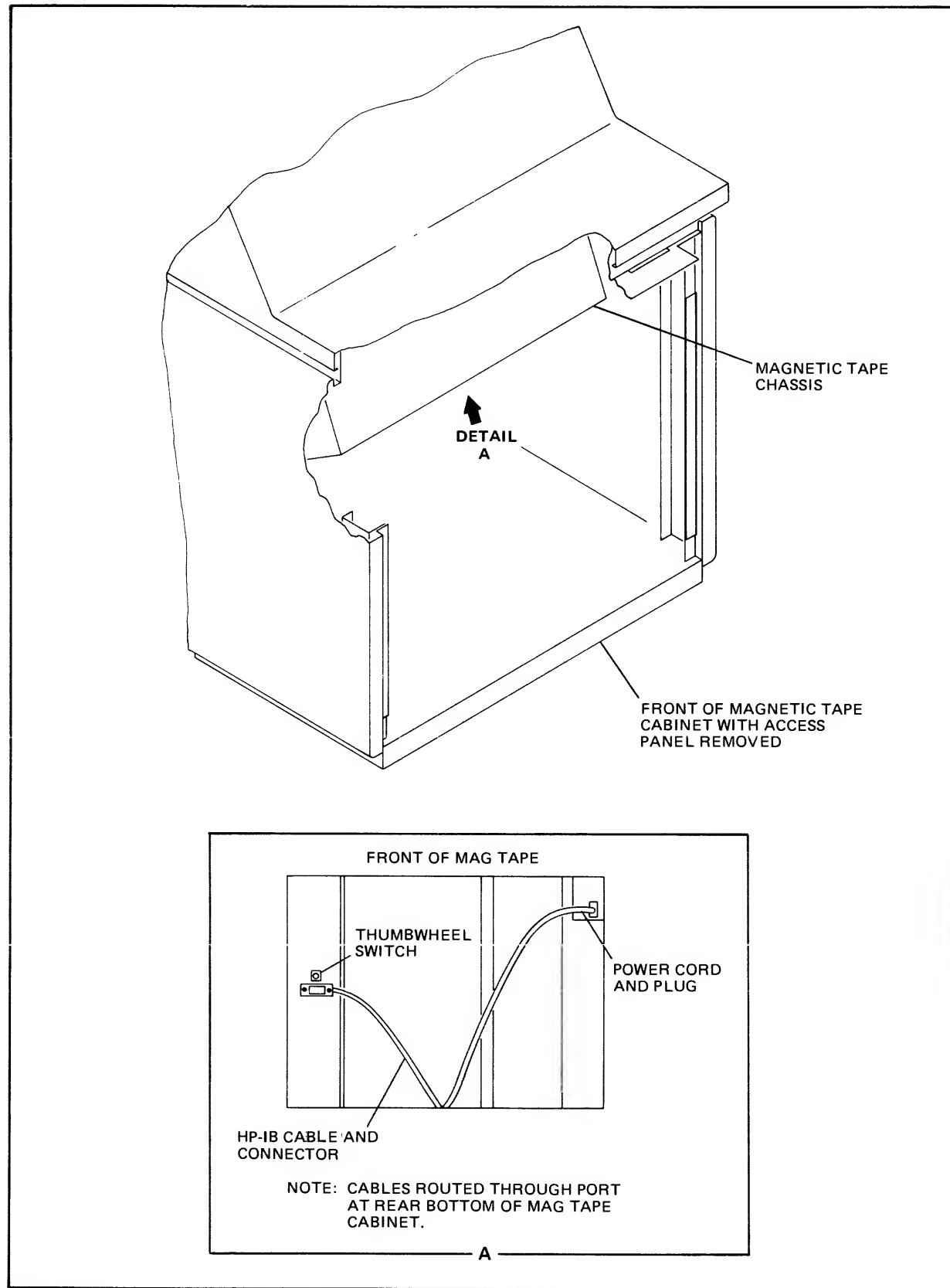
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Figure 3-5. Magnetic Tape HP-IB Device Address Switch and HP-IB
Cable and Connector

The system is verified in two steps. The first is an OFFLINE verification which checks the following areas:

o Cold Load Path
o Selected Assemblies
o Peripheral devices

Step two is an ONLINE activity which accomplishes the following:

o System Cold Load from Magnetic Tape
o System Configuration
o System Utilization.
o Workout2
o Power Fail Verification

Refer to your HP 3000 Series 44 diagnostic binder when information is required to run diagnostics or self-tests. If a step does not successfully complete, corrective action is required before proceeding. Use the diagnostics and associated manuals to identify hardware problems. Use your HP 3000 Series 44 Reference/Training Manual for any required technical descriptions of the processor components. Use the appropriate peripheral device service manuals for their specific hardware and maintenance descriptions. Table 5-1 lists the available device tests that can be performed.

Table 5-1. Available Device Tests

DEVICE	STANDALONE	DISC VERIFIER	SELF-TEST	SLEUTH SIM.	CMP* SELF-TEST
HP 79XXB		X		X	
HP 13037B	X			X	
HP 2563A/ 65A/66A	X		X		
HP 2608A			X	X	
HP 2617A					
HP 2619A					
HP 2631A			X	X	
HP 2680A/ 87A/88A			X		
HP 7911P					
HP 7912P					
HP 7914P				X	
HP 7970E	X			X	
HP 7974A/ 78A	X		X		
HP 7976A	X			X	
HP 9895A	X		X		
HP 262XX					
HP 264XA			X		
HP 2893A					
GIC	X				X
ADCC (Chan 1)	X				X
MEMORY	X				X**
CPU			X		X
CMP					X

* The CMP self test checks the CMP, CPU, memory, system control panel, the ADCC at channel 1, and all GICs.
** First 128K Words of Memory tested only in self test.

SLOT LOCATIONS

Figures C-1 and C-2 specify slot locations to be used for all PCAs that are installed in the first or second card cages. The following rules apply in all systems:

o   The four CPU PCAs must be installed in the order shown.

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┌─────────────┐
│    NOTE     │
└─────────────┘
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Slots 11 and 13 in card cage one are both occupied for
Series 44. Series 48 requires only a CPS PCA in slot 13.
Slot 11 will be empty.

o   The first memory array PCA must be installed in the location furthest from the memory controller. This measure prevents the memory cable from hanging free or loosening.

o   The first ADCC (Main) must be installed in slot 14 so that it is within reach of the CMP cable.

o   The ADCC (Main) and ADCC (Extender) PCAs should be installed in adjacent slots to facilitate interconnection.

o   The GIC PCAs must be installed in the following channel number order: 11, 9, 10, 13, 12.

o   In the first card cage, INP PCAs and printer translator PCAs must be installed in slots adjacent to the associated CIG PCA. This measure allows the internal HP-IB cables to be connected without passing over other PCAs.

o   Determine whether or not channel 12 has been installed in the first card cage. If it is present, move it to slot 7 of the second card cage. Move any INP PCAs or printer translator PCAs connected to it to slots 17 through 24. The long internal GIC cable provided with the system should be used only in the second card cage on channel 12; this measure allows the cable to pass over the Memory PCAs.

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┌─────────────┐
│    NOTE     │
└─────────────┘
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All internal GIC cables required for system configuration are provided with the system inside the left front door. These cables should never be cut to reduce their length since they may be needed to support larger configurations in the future.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17 18 19 20 21 22 23 24
MEM ARRAY 0	MEM ARRAY 1	MEM ARRAY 2	MEM ARRAY 3	MEM ARRAY 4	MEM ARRAY 5	MEM ARRAY 6	MEM ARRAY 7	MEMORY CONTROLLER	CMP	CTL	ALU	PCS	ADCC M (CH 1)	ADCC E	GIC (CH 11)	GIC (CH 9)

ADDITIONAL GIC'S,
ADCC'S, INP'S, AND
PRINTER TRANSLATORS

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┌─────────────────┐
│      NOTE       │
└─────────────────┘
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GICs must be installed in the following channel
number order: 11, 9, 10, 13, 12. INPs and printer
translator PCAs must be installed in slots adjacent
to their controlling GIC. In a Series 48 system, slot
11 is empty and slot 13 holds a CPS PCA rather
than a PCS PCA.

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Figure C-1. Slot Locations (Initial Configuration)